

WHAT IS CLAIMED IS:

1. A method for exchanging online information over a private network in a client/server system, said client/server system including a client for sending and receiving the online information over an Internet network, and a server connected to said client via a router, said method comprising the steps of:

a), by said server, determining whether said client uses said private network and sending the determined result to said client;

b), by said client, sending information about its valid Internet protocol (IP) addresses and information about its actually used IP address to said server if said result determined at said step a) indicates that said client uses said private network;

c), by said server, sending acknowledgement information to all of said IP addresses contained in said information sent at said step b), said acknowledgement information containing information regarding an IP address of said client for actual access to said server via said router;

d), by said client, determining from said acknowledgement information sent at said step c) whether it employs a private IP address; and

e), by said router, storing said information about said

actually used IP address of said client if it is determined at
said step d) that said client employs the private IP address,
and then exchanging the online information between said server
and said client via said actually used IP address of said
5 client.

2. The online information exchange method as set forth in
Claim 1, wherein said step a) includes the steps of:

a-1), by said client, sending to said server information
10 about its IP address for access to said server;

a-2), by said server, comparing said access IP address
with an IP address of said client for actual access to said
server via said router to determine whether the two IP
addresses are the same, and then determining from the compared
15 result whether said client uses said private network; and

a-3), by said server, sending the determined result to
said client.

3. The online information exchange method as set forth in
20 Claim 2, wherein said step a-1) includes the step of, by said
client, sending a transmission control protocol (TCP)
standard-based packet with said information about said access
IP address to said server upon accessing it.

4. The online information exchange method as set forth in
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Claim 1, wherein said step b) includes the step of, by said client, recognizing that it is connected to said server via a public IP address, if said result determined at said step a) indicates that said client uses no private network, and then
5 gaining access to said server via said public IP address to exchange the online information with said server.

5. The online information exchange method as set forth in Claim 1, wherein said step b) includes the step of, by said
10 client, sending a TCP standard-based packet with said information about its valid IP addresses and a user datagram protocol (UDP) standard-based packet with said information about its actually used IP address to said server.

15 6. The online information exchange method as set forth in Claim 1, wherein said step c) includes the step of, by said server, sending a UDP standard-based packet with said acknowledgement information to all of said IP addresses contained in said information sent at said step b), said
20 acknowledgement information containing said information regarding said IP address of said client for actual access to said server via said router.

7. The online information exchange method as set forth in
25 Claim 1, wherein said step d) includes the steps of:

d-1), by said client, comparing a list of IP addresses thereof with said IP address contained in said acknowledgement information sent at said step c); and

d-2), by said client, recognizing that it uses said private network but employs a public IP address, if said IP address contained in said acknowledgement information is determined to be present in said IP address list at said step d-1), and that it uses said private network but employs no public IP address, if said IP address contained in said acknowledgement information is determined not to be present in said IP address list at said step d-1).

8. The online information exchange method as set forth in Claim 1, wherein said step e) includes the steps of:

e-1), by said client, notifying said server that said client employs the private IP address, if it is determined at said step d) that said client employs the private IP address;

e-2), by said router, storing said information about said actually used IP address of said client and mapping it to said client; and

e-3), by said router, connecting said server to said client via said actually used private IP address of said client stored therein to deliver the online information sent from said server to said client.

9. The online information exchange method as set forth in Claim 8, wherein said step e-3) includes the step of releasing said IP address of said client mapped at said step e-2) if information is not exchanged between said server and said client for a predetermined period of time or more.

10. The online information exchange method as set forth in Claim 1, wherein said step e) includes the steps of:

e-1), by said client, notifying said server that said client employs no private IP address, if it is determined at said step d) that said client employs no private IP address; and

e-2), by said server, recognizing from the notification at said step e-1) that said client uses said private network but employs a public IP address, and then exchanging the online information with said client via the public IP address.

11. The online information exchange method as set forth in Claim 1 or Claim 2, wherein said step b) includes the step of, by said client, sending information about its used port to said server together with said information about its valid IP addresses and said information about its actually used IP address; and

wherein said step a-1) includes the step of, by said client, sending said information about its used port to said

server together with said information about its IP address for access to said server.

12. A system for exchanging online information over a private network in a client/server system, said client/server system including a client for sending and receiving the online information over an Internet network, and a server connected to said client via a router, wherein said client is adapted for sending first information about its Internet protocol (IP) address for access to said server, to said server upon accessing the server, determining whether it uses said private network, from first acknowledgement information sent from said server in response to said first information, and sending second information to said server upon determining that it uses said private network, said second information containing information about valid IP addresses of said client and information about an actually used IP address of said client;

said server is adapted for comparing said access IP address contained in said first information sent from said client with an IP address of said client for actual access to said server via said router to determine whether the two IP addresses are the same, sending the determined result as said first acknowledgement information to said client and then sending second acknowledgement information to all of said IP addresses contained in said second information, sent from said

client in response to said first acknowledgement information,
such that said client determines on the basis of said second
acknowledgement information whether it employs a private IP
address, said second acknowledgement information containing
5 information regarding said IP address of said client for
actual access to said server via said router; and

said router is adapted for storing said information about
said actually used IP address of said client if said client
determines on the basis of said second acknowledgement
10 information from said server that it employs the private IP
address, and then delivering a message sent from said server
to said client via said actually used IP address of said
client stored therein, such that said client exchanges the
online information with said server.

13. The online information exchange system as set forth
in Claim 12, wherein said client employs a plurality of
private or public IP addresses.

14. The online information exchange system as set forth
in Claim 12, wherein said client is further adapted for
sending information about its used port to said server
together with said first information about its IP address for
access to said server and said second information containing
25 said information about its valid IP addresses and said

information about its actually used IP address.

15. The online information exchange system as set forth
in Claim 12, wherein said server is further adapted for
5 sending a user datagram protocol (UDP) standard-based packet
to said client via said router.